



Fall General Meeting

October 26-31, 1958

PITTSBURGH, PENNSYLVANIA

Headquarters
Penn-Sheraton Hotel

SCHEDULE OF LOCALLY SPONSORED EVENTS

Sunday—October 26

- 4:00 PM—Welcome Tea—Monongahela Room—17th Floor
- 4:00 PM—Registration Starts

Monday—October 27

- 9:00 AM—Ladies Coffee Hour—Room 1666 (daily)
- 2:00 PM—General Session
- 3:00 PM—Ladies Tour of Alcoa Building and tea

Tuesday—October 28

- 9:00 AM—Trip to Irvin Works, U.S. Steel Corp.
- 11:30 AM—Ladies Tour to Longue Vue Country Club (Luncheon)
- 12:00 noon—Luncheon—Pittsburgh Redevelopment and Bicentennial—Ballroom
- 1:00 PM—Trip to Westinghouse Elec. Corp.—East Pittsburgh Works (Tour A)
- 1:00 PM—Trip to Westinghouse Elec. Corp.—Atomic Power Dept. (Tour B)

Wednesday—October 29

- 8:30 AM—Trip to Shippingport Atomic Power Station
- 12:30 PM—Ladies Bridge-Luncheon, Utility Hall
- 7:00 PM—Golden Triangle Frolics—Ballroom

Thursday—October 30

- 9:00 AM—Trip to U.S. Steel Corp. Research Center
- 12:00 noon—Luncheon—Research in the Pittsburgh Area—Presentation of Fritz Medal—Ballroom
- 1:00 PM—Ladies Tour to University of Pittsburgh
- 1:00 PM—Trip to Aluminum Co. of America Research Laboratories

Friday—October 31

- 9:00 AM—Trip to Westinghouse Research Laboratory
- 1:00 PM—Trip to Pennsylvania Railroad—Conway Yard



The Golden Triangle, Pittsburgh, Pa.

The 1958 AIEE Fall General Meeting will be held at the Penn-Sheraton Hotel, Pittsburgh, Pa., from Sunday, October 26th to Friday, October 31st. General theme of the meeting is "Research—Gateway to the Future" and the scheduled events will include social activities, technical sessions and inspection trips to maintain the high standards of past Fall Meetings.

HOSPITALITY: On Sunday, October 26th, from 4:00 PM to 6:00 PM, a Welcome Tea will be held in the Monongahela Room on the 17th floor of the hotel. This tea is sponsored jointly by the Ladies Committee and the Pittsburgh Section. It gives an opportunity for renewing old acquaintances and meeting new friends. The Ladies Hospitality Suite will be in Room 1666 (Presidential Suite). This room will be headquarters for the ladies throughout the week.

GENERAL SESSION: The GENERAL SESSION will be held at 2:00 PM on Monday, October 27th, in the Ballroom. The theme of this session will be "Atomic Energy and the Shippingport Project." The principal speaker is Mr. J. K. Hodnette, Executive Vice-President, Westinghouse Electric Corporation. He will talk on "Industry and the Atom Today." A feature of this session will be the presentation of the AIEE Education Medal to Professor John F. Calvert, Head, Electrical Engineering Department, University of Pittsburgh. The address of welcome to Pittsburgh will be made at the General Session by Honorable David L. Lawrence, Mayor, City of Pittsburgh.

LUNCHEONS: Two important luncheons are scheduled during the Fall Meeting. These will be held at noon on Tuesday and Thursday in the Ballroom.

The Tuesday lunch will have as its theme the "Pittsburgh Redevelopment and Bicentennial." The speaker will be Mr. Adolph W. Schmidt, who is President of the Allegheny Conference on Community Development. Mr. Schmidt is Vice President and Governor of T. Mellon and Sons and is actively engaged in many public service projects. He will relate the events which have brought Pittsburgh the name of "Renaissance City of America."

The Thursday luncheon will follow the theme of "Research in the Pittsburgh Area." The directors of research of the many companies in this area will attend this meeting. As a fitting climax to this gathering the John Fritz Medal will be awarded to Dr. Mervin J. Kelly, President, Bell Telephone Laboratories, Inc. Dr. Kelly's acceptance speech will conclude the luncheon hour.

The price of each of these luncheons is \$3.75. Your ticket may be reserved by using the registration card which accompanies this meeting notice.

HOTEL RESERVATIONS: All reservations for rooms should be made through the Penn-Sheraton Hotel which has set aside a large number of rooms for this meeting. When no more rooms are available, the hotel will automatically forward your reservation request to another nearby hotel through the Pittsburgh Convention Bureau. A confirmation will be mailed to you directly by the hotel accepting the reservation. If rooms at rates requested are not available, you will be assigned a room at the next higher rate available.

Mr. L. W. Mahler is Chairman of the Sleeping Rooms Sub-Committee, and should be contacted

Continued on page 7

ADVANCED COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40¢ each (80¢ each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$10 denominations are available to those who wish to avoid remittance, by check or otherwise. The Transactions Papers will also be published in the bimonthly publications.

Note: Unnumbered Conference Papers (CP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the Transactions and are not presently scheduled for reproduction in any form by the Institute.

Note: The TRANSACTIONS papers will be printed in the bimonthly publications as follows:

- I COMMUNICATION AND ELECTRONICS.
- II APPLICATIONS AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

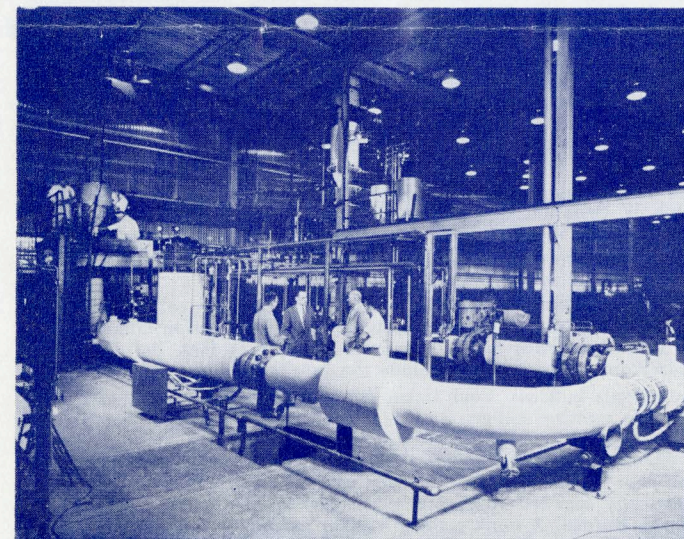
Monday, October 27

9:00 a.m.—Data Communication

- 58-1181. Optimum Block Length for Data Transmission with Error Checking. F. B. Wood, International Business Machines Corp.
- 58-1240. Assessment Effects of Delay Distortion in Data Systems. I A. D. Fowler and R. A. Gibby, Bell Telephone Labs., Inc.
- CP58-1241. Measurements of Narrow Band Noise on Telephone Facilities in Connection with Analog Data. J. O. Edson, E. E. Froelich and R. K. Townley, Bell Telephone Labs., Inc.
- 58-1204. An FM Digital Subset for Data Transmission Over Telephone Lines. L. A. Weber, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-300. Synchronized Clocks for Data Transmission. J. O. Edson, M. A. Flavin and A. D. Perry, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-302. SAGE Data System Considerations. R. G. Enticknap, Massachusetts Institute of Technology and E. F. Schuster, Western Electric Co., Inc. (Re-presented for Discussion only)
- 58-407. SAGE Data Terminals. R. O. Soffel and E. G. Spack, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-332. Communication Channels for SAGE Data Systems. R. T. James, American Telephone & Telegraph Co. (Re-presented for Discussion only)

9:00 a.m.—Nuclear Instrumentation and Control

- CP58-1257. Coolant Instrumentation for Pressurized Water Reactor Power Plants. J. J. Lihota and C. B. Hoppa, Westinghouse Electric Corp.



Westinghouse Atomic Power Department

- CP58-1319. A Rod Position Indication System for Pressurized Reactors. R. C. Floyd and J. F. Reuther, Westinghouse Electric Corp.
- 58-1329. The Design of A Pile Oscillator for the Ford Nuclear Reactor. J. Stone and W. Kerr, University of Michigan. (Re-presented for Discussion only.)

- CP.* Systems Design and Instrumentation of WTR In-Pile Test Loops. M. A. Vogel, Westinghouse Electric Corp.
- CP.* Instrumentation and Control System for the WTR Critical Experiments. F. L. Kelly, Westinghouse Electric Corp.

9:00 a.m.—Management

- CP.* Work Measurement For The Engineer And For Management. J. F. McQuillin, West Penn Power Co.
- CP.* Work Simplification In A Public Utility. A. Antonette, Detroit Edison Co.

9:00 a.m.—Research

- CP58-1145. Managing Research Laboratory Finances. T. M. Linville and C. S. Van Wormer, General Electric Co.
- 58-1153. Electrical Insulation Research in a Power Utility—A Programme for Profit. A. W. W. Cameron, The Hydro-Electric Power Commission of Ontario.
- CP58-1242. Two Examples of Industrial Research in France Relating to the Transmission of Electrical Energy. F. M. Cahen and R. A. Tellier, Electricite De France.

9:00 a.m.—Mining Industry

- CP.* The Above Ground Substation and Underground Portable Switchhouse for A.C. Mining. D. E. Hamilton, General Electric Co.
- CP.* The Underground Mine Power Center for A.C. Mining. V. H. Youel, Westinghouse Electric Corp.
- CP.* Underground Cable Choice and Installation for A.C. Mining. T. R. Weichel, Okonite Co.
- CP.* Safety Distribution Centers for A.C. Mining. G. P. Benish, MINING.

2:00 p.m.—General Session

- "Greetings from Pittsburgh Section"—W. R. Harris, Chairman
- "Address of Welcome"—The Honorable David L. Lawrence, Mayor of Pittsburgh
- "Response and Address"—President L. F. Hickernell
- "Presentation of The AIEE Education Medal"
- History of the Education Medal. Wm. R. Brownlee, Chairman, Recognition Awards Committee
- Career of the Medalist. Dr. Arthur B. Bronwell, President, Worcester Polytechnic Institute
- Presentation of the Medal and Certificate. President L. F. Hickernell
- Response of the Medalist. Professor John F. Calvert, Head, Electrical Engineering Department, University of Pittsburgh
- Address—"Industry and the Atom Today." J. K. Hodnette, Executive Vice-President, Westinghouse Electric Corp.

Tuesday, October 28

9:00 a.m.—Communication Switching Systems

- 58-1243. A New Small Crossbar Telephone System For Private Branch Exchanges. H. H. Abbott, Bell Telephone Labs., Inc.
- CP.* Restricters For Direct Distance Dialing. C. W. Freeman, North Electric Co.
- CP58-1244. Mobile Telephone Switching Equipment. L. F. Bernhard, Illinois Bell Telephone Co. and E. N. Duff, Michigan Bell Telephone Co.
- 58-1245. Optimal Utilization And Extension of Interoffice Trunking Facilities. R. E. Kalaba and M. L. Juncosa, The Rand Corp. (Re-presented for Discussion only)
- 58-1246. Mechanization of Toll Switching at Providence, Rhode Island. C. W. Anderson and H. N. Thornton, New England Telephone & Telegraph Co. (Re-presented for Discussion only)

9:00 a.m.—Switching Surges

- CP.* Switching Surges on High Voltage Systems—Progress Report. AIEE Working Group on Switching Surges.
- CP58-1247. Switching Surge Voltages Due to the Interruption of Transformer Magnetizing Current. A. K. Amchin, American Electric Power Service Corp. and R. T. Curto, The Detroit Edison Co.
- 58-1185. Overvoltages Following Secondary Switching of Transformers Connected to High Voltage Lines. L. O. Barthold, I. B. Johnson and A. J. Schultz, General Electric Co.

- 58-1216. Transmission Line Switching Surges as Modified by Trans-III former Impedances and Arrester Operation. D. F. Shankle and E. R. Taylor, Jr., Westinghouse Electric Corp.
- 58-1178. Magnification of Switching Surges. A. J. Schultz, I. B. Johnson and N. R. Schultz, General Electric Co.

9:00 a.m.—The Young Engineers in the Power Industry

- CP58-1146. The Young Electrical Engineer in a Small Public Utility Company. H. W. Evers, Jr., Fitchburg Gas and Electric Co.
- CP58-1147. The Young Electrical Engineer with a Consulting Engineering Firm. J. C. Hitt, Jackson and Moreland, Inc.
- CP58-1148. The Electrical Engineer in Power Equipment Design. E. S. Coleman, Westinghouse Electric Corp.
- CP58-1149. The Young Electrical Engineer in a Large Public Utility Co., C. F. Paulus, Cleveland Electric Illuminating Co., and R. L. Webb, Consolidated Edison Co. of N. Y., Inc.

9:00 a.m.—Feedback Control Systems For Metal Rolling And Processing

- CP.* Feedback Control Systems In The Metal Rolling And Processing Industries. A. W. Smith and J. W. Cook, Westinghouse Electric Corp.
- CP.* The Use of Frequency Response Tests in the Analysis of A Foil Mill Automatic Gauge Control. R. M. Sills, General Electric Co.
- CP.* Simulation of Steel Mill Control Systems. R. A. Phillips, General Electric Co.
- CP.* Hot Strip Mill Gage Control. O. C. Gochenour, Jones & Laughlin Steel Corp.

9:00 a.m.—Emergency Operation of Industrial Plant Power Systems

- CP.* The Development of Reliable Electrical Systems in Petroleum Refineries. J. C. Howard, Standard Oil Co. of Indiana.
- CP.* Role of Modern Switchgear in Preventing and Coping with Operating Emergencies. W. P. Burt and W. A. Fleishli, General Electric Co.
- CP58-1250. A Power System Designed for Reliability and Emergency Operation. R. Loewe, Argonne National Lab.
- 58-1188. High Capacity Current Limiting Fuses Today. E. M. Fitzgerald and V. N. Stewart, General Electric Co. (Re-presented for Discussion only)

9:00 a.m.—Semiconductor Switching Devices—I

- 58-1249. Theory of Transient Build-up In Avalanche Transistors. I W. Shockley and J. Gibbons, Shockley Semiconductor Labs.
- CP.* PNP Switches. J. M. Goldey, Bell Telephone Labs., Inc.
- CP.* Germanium PNP Switches. I. A. Lesk, General Electric Co.
- CP58-1223. High Gain Static A-C Switch. E. A. Petrocelli, Westinghouse Electric Corp.
- CP58-1248. A Silicon Controlled Rectifier—Its Characteristics and Ratings.—I D. K. Bisson and R. F. Dyer, General Electric Co.

9:00 a.m.—Mining Industry

- CP.* A.C. Powered Mining Machines. R. Holcombe, Jeffrey Mfg. Co., and J. B. Wren, Westinghouse Electric Corp.
- CP.* An A.C. Powered Shuttle Car. A. L. Lee, Consolidation Coal Co.
- CP58-1251. Multi-Motor A.C. Powered Direct-Drive Shuttle Car. J. Pokelsek, The Reliance Electric & Engineering Co. and R. D. Greer, Joy Mfg. Co.
- 58-1210. Trends In Automatic Hoist Controls. G. L. Tiley and II E. Zucker, Canadian Westinghouse Co., Ltd.

9:00 a.m.—Safety

- CP.* Some Aspects of Grounding, Insulating and Bonding in the Problem of Shock Hazard. J. B. Hays, Bell Telephone Labs., Inc.
- CP.* Hazard Control in Electrical Testing. J. V. Grimaldi, General Electric Co.
- CP58-1252. An Objective Look at Electrode or Grounding Voltages for Safety on Industrial Machine Controls. H. E. Dow and R. W. Bradley, United Shoe Machinery Corp.
- CP58-1209. Higher Residential Voltages—Safety Considerations. H. H. Watson, General Electric Co.

2:00 p.m.—Transmission and Distribution

- 58-1255. Bibliography on Extra-High-Voltage Systems. P. A. Abetti, III General Electric Co.
- CP58-1256. Application of Electronic Computers to Structural Design of Transmission Towers. A. M. Lount, A. M. Lount and Associates.
- CP58-1254. First Report on Corrosion Tests of a New Steel Wire With Thick Aluminum Covering. J. G. Cavanagh, Copperweld Steel Co.

- 58-403. Lightning Current Distribution in Towers and Ground Wires. III I. B. Johnson, A. J. Schultz, General Electric Co. and W. S. Price, American Electric Power Service Corp. (Re-presented for Discussion only)
- 58-1253. Magnetic Fields Around a Transmission Line Tower. J. G. Anderson and J. H. Hagenuth, General Electric Co. (Re-presented for Discussion only.)

2:00 p.m.—Theory and Practice of Reactor Control

- CP.* A Digital Nuclear Reactor Control System. E. P. Gyftopoulos and P. M. Coble, Massachusetts Institute of Technology.
- CP.* The Effect of Feedwater Control on A Pressurized Reactor. E. F. Borner, General Electric Co.
- CP.* Automatic Control of Boiling Water Reactors. M. A. Head, General Electric Co.
- CP.* Variable Moderator Level Control of Boiling Water Reactor. S. R. Nixon, American Standard Corp.
- CP.* Stability Study of Enrico Fermi Power Plant. R. N. Albrecht, University of Michigan.

2:00 p.m.—Characteristics of Loads

- 58-1258. Characteristics of an Electric Resistance Furnace Load. II W. A. Stelzer, The Dow Chemical Co.
- 58-1259. Load Characteristics of a Submerged Arc Silicon Smelting Furnace. G. Grant III, Dow-Corning Co.
- CP58-1200. Characteristics of Electrical Loads in a Cement Plant. L. C. Pringle, Hercules Cement Co.

2:00 p.m.—Semiconductor Switching Devices—II

- CP.* High Current Trinstors. F. S. Stein and E. W. Torok, Westinghouse Electric Corp.
- CP.* A Silicon High Current Transistor Switch of Low Saturation Resistance. D. Navon and P. DeBeurs, Transistor Electronic Corp.

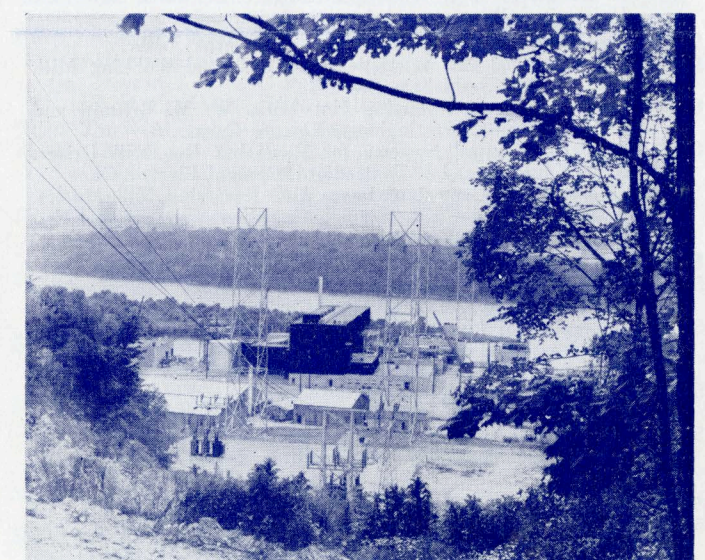
- 58-1260. Silicon Controlled Rectifiers from Oxide-Masked Diffused Structures. R. W. Aldrich and N. Holonyak, Jr., General Electric Co.

- 58-1206. Linear Power Amplifiers Using Dynistors or Trinstors. I F. J. Hierholzer, Jr., Westinghouse Electric Corp.
- CP.* A Controlled Rectifier in Power Control Applications. W. D. Cockrell, C. S. Walker and J. D. Harnden, Jr., General Electric Co.

- 58-1234. The Controlled Rectifier—Key to the Continuing Control Renaissance. J. D. Harnden, Jr., General Electric Co. (Re-presented for Discussion only)

2:00 p.m.—Electric Systems For Metal Rolling And Processing

- CP.* An Automatic Numerical Data Logging System For Tinplate Lines. G. E. Terwilliger, General Electric Co.
- CP.* Operation of Rectifiers In Parallel With Existing Generators To Increase Power For Hot Strip Mill Operation. G. F. Eckenstaler, Allis-Chalmers Mfg. Co.
- CP.* Industrial Control Designs for A Changing Technology. P. A. Travisano, General Electric Co.
- 58-903. An Automatic Gauge Controller For A 56 Inch Reversing Steel Mill. R. L. Duke and L. R. Hulls, Canadian Westinghouse Co. Ltd. (Re-presented for Discussion only)



Shippingport Atomic Power Station

2:00 p.m.—Basic Sciences

- 2:00 p.m.—Computer Application in Power Systems
 CP58-1261. Machine Printing of Flow Diagrams for Digital Load Flow Solutions. J. L. Bloodworth, Bonneville Power Adm.
 58-1262. Digital Program for the Economic Selection of Generating Capacity Additions. A. Cohen, The Service Bureau Corp. and L. E. Jensen, Illinois Power Co.
 58-1171. A Primer on Loss Formulas. D. C. Harker, Commonwealth III Associates, Inc.
 CP58-1217. Transmission and Distribution Interruption Records by Mechanical Accounting Methods. J. R. Gummersall and J. J. Russell, Long Island Lighting Co.
 58-1189. Some Applications of A New Approach to Loss Minimization in Electrical Utility Systems. T. W. Sze, J. R. Garnett and J. F. Calvert, University of Pittsburgh. (Re-presented for Discussion only)

2:00 p.m.—The Motivation Multiplier in Electrical Engineering Education

- CP.* The Profile of an Engineer. G. D. Lobingier, Westinghouse Electric Corp.
 CP.* Techniques for Motivating Students. S. R. Warren, Jr. Univ. of Pennsylvania and B. R. Teare, Carnegie Institute of Technology.
 CP.* Motivation Through Challenge. W. C. Johnson and P. R. Clement, Princeton Univ.
 CP.* Opportunity and Responsibility as Motivators for Engineers. W. G. Amey, Leeds & Northrup Co.
 CP.* 1200 Case Studies of Engineering Motivation. G. E. Moore, Westinghouse Electric Corp.

8:00 p.m.—Automation in the Soviet Union

- Members of the Panel are:
 S. W. Herwald, Westinghouse Electric Corp.
 N. Cohn, Leeds and Northrup Co.
 R. Palmer, International Business Machines Corp.
 W. E. Vannah, McGraw Hill Publishing Co.
 R. J. Kochenburger, Univ. of Connecticut
 G. C. Newton, Jr., Massachusetts Institute of Technology
 E. J. Kelly, Massachusetts Institute of Technology

Wednesday, October 29

9:00 a.m.—Communication Theory

- CP58-1263. Simplified Analysis of Digital Error Correction Techniques. E. E. Moore, Radio Corp. of America.
 CP.* A Mechanized Radar Observer. G. P. Dineen, Massachusetts Institute of Technology.
 CP58-1264. Utility Value Concepts in The Analysis of Communication Systems. L. S. Schwartz, New York University.
 CP.* Asynchronous Multiplexing. J. E. Taylor, General Electric Co.
 58-1157. Recent Progress in Applying Information Theory to Digital Transmission Systems. R. Filipowsky, Westinghouse Electric Corp. (Re-presented for Discussion only)
 58-1233. Binary Communication Feedback Systems. B. Harris, I A. Hauptschein, K. C. Morgan and L. S. Schwartz, New York University (Re-presented for Discussion only)

9:00 a.m.—Drive Systems For Reversing Hot Mills

- CP.* The Electrical Characteristics of a Universal Slabbing Mill. C. J. Bevan, Bethlehem Steel Co.
 CP.* Programming of Reversing Hot Mills. W. M. Brittain and E. H. Browning, Westinghouse Electric Corp.
 CP.* Industrial Control Systems for Reversing Hot Mill Drives. G. A. Kaufman and J. T. Bradford, General Electric Co.
 58-1265. Motor Field Control of Large D-C Reversing Mill Motors. II L. R. Hulls and G. H. Samuel, Canadian Westinghouse Co., Ltd. (Re-presented for Discussion only.)

9:00 a.m.—Rotating Machinery and Relays

- 58-1190. Protection of Pilot-Wire Relay Circuits. AIEE Subcommittee III on Pilot Wires, J. L. Blackburn, Chairman
 58-1224. Operation of Apparatus Protective Relaying at Reduced Frequencies. AIEE Subcommittee on Generator Protection, C. S. Murray, Chairman
 58-1179. How to Specify the Noise Rating of Large Electric Rotating III Machines. M. E. Talaat, Elliott Co.
 58-1218. Proposed Test Procedure for Noise Measurements on Rotating III Electric Machinery. A Committee Report, C. G. Veinott, Chairman

9:00 a.m.—Automation of Classification Yards

- 58-1266. An Automatic Speed Control System for a Gravity Freight II Classification Yard. R. J. Berti, Union Pacific Railroad Co. and T. J. Dosch, Reeves Instrument Corp.

- CP58-1213. Modern Railroad Freight Classification Yards Operation and Maintenance Considerations. H. A. Scott, New York Central System
 CP58-1230. A Method for Automatic Control of Car Retarders. H. C. Kendall and J. H. Auer, Jr., General Railway Signal Co.

9:00 a.m.—Feedback Control Systems—I

- 58-1271. Quasi-Optimization of Relay Servos By Use of Stored Energy II for Braking. C. McDonald and G. J. Thaler, U.S. Naval Post-graduate School.
 58-1191. A Dual-Mode Servomechanism Utilizing Saturation Switching. H. R. Weed and F. C. Weimer, The Ohio State University. (Re-presented for Discussion only)
 58-1268. The Effect of Speed-Dependent Friction and Backlash on the Stability of Control Systems. E. A. Freeman, English Electric Co., Ltd., formerly of Kings College.
 58-1192. Optimum Response of Discontinuous Feedback Control Systems. F. W. Nesline, Jr., Massachusetts Institute of Technology. (Re-presented for Discussion only)
 58-1267. Two Theorems on the Number of Real Roots of the Characteristic Equation of any Stable Linear Physical System. J. F. Koenig, The George Washington University.
 58-1321. System Considerations in Computer Control of Semi-continuous Chemical Process. T. M. Stout, Ramo-Wooldrige Corp. (Re-presented for Discussion only)
 CP58-1270. Classified Bibliography on Feedback Control Systems Part II: Root-Locus and Associated Procedures. T. J. Higgins, University of Wisconsin.
 58-1327. Instability In A Non-Linear Conditionally-Stable System II Subjected to A Sinusoidal Input. J. L. Douce and R. E. King, Queen's University of Belfast.

9:00 a.m.—Nuclear Power Plants—I

- 58-1199. Electrical & Control Features of the Shippingport Atomic III Power Station. H. G. Frus, H. A. Thompson, H. A. Van Wassen and E. J. Woolever, Duquesne Light Co.
 CP.* Operating Experience on Vallecitos Boiling Water Reactor. L. Kornblith, General Electric Co. and W. Raymond, Pacific Gas & Electric Co.
 CP58-1273. Performance of the Sodium Reactor Experiment. J. E. Owens, W. T. Morgan and L. E. Glasgow, North American Aviation, Inc.
 CP.* Design Problems and Operating Experience on the APPR-I. K. Kasschau, Alco Products, Inc.
 58-1272. Organic Moderated Reactors for Central Station Power. III W. E. Parkins and E. F. Weisner, North American Aviation, Inc.

9:00 a.m.—Transmission and Distribution

- 58-1214. Unbalanced Loading of Three-Phase Transformer Banks—III III Effect of Transformer Impedance. S. W. Anderson, Middle West Service Co.
 58-1172. Motor Starting Lamp Flicker on Open Delta Transformer III Banks. J. C. Neupauer, Westinghouse Electric Corp. and C. L. Smith, Jr. Light, Water and Sewerage Dept., Griffin, Georgia.
 CP58-1274. Tests on Protective Gaps for Distribution Series Capacitors. H. E. Weaver, Commonwealth Edison Co. and N. M. Neagle, General Electric Co.
 58-1184. Report of a Survey on the Connection of Shunt Capacitor III Banks. AIEE Capacitor Subcommittee of T. & D. Committee, B. H. Schultz, Chairman.
 58-258. Higher Secondary Voltage for Residential Service. A. S. III Anderson, C. Hutchinson and S. J. Pearson, Ebasco Services, Inc. (Re-presented for Discussion only.)

9:00 a.m.—Electronic Circuits—I

- 58-1326. The Diode Reactance Modulator. G. F. Montgomery, National Bureau of Standards.
 58-1238. A Stable, Direct Coupled, Transistor Servo Preamplifier. I A. N. DeSautels, Minneapolis-Honeywell Regulator Co.
 58-1237. Performance of Class B Audio Amplifiers with Random I Noise Signals. T. Usher, Jr., Yale University.
 58-1275. An Analog Frequency Measuring Circuit Accurate to 0.1%. I J. Mitchell, Link Aviation, Inc. (Re-presented for Discussion only.)
 58-1276. Transistor Phase Locked Oscillators. K. A. Edwards & I O. Golubjatnikov, General Electric Co. and D. J. Brady, United Engineers, Inc. (Re-presented for Discussion only.)

2:00 p.m.—Communication in Space

- Members of the Panel are:
 Col. J. H. Ritter, USAF
 R. L. Shuey, General Electric Co.
 R. M. Fano, Massachusetts Institute of Technology
 J. Vogelmann, Rome Air Development Center
 J. R. Pierce, Bell Telephone Labs., Inc.

2:00 p.m.—Rotating Machinery

- CP.* Measurement of Rapidly Changing Temperatures. J. E. Shea, Underwriters Labs.
 CP.* Application Problems in the Measurement of Motor Winding Temperatures. C. E. Green, T. Spink, Jr. and D. Vandeventer, Leeds & Northrup Co.
 CP.* Start Winding Temperature Measurement of Fractional Horsepower Motors. R. E. Seely, General Electric Co.
 CP.* Temperature Measurement of Fractional Horsepower Motors. W. R. VanDyke, Westinghouse Electric Corp.
 CP58-1278. Temperature Measurement of Motor Windings on Stalled Rotor. V. G. Vaughan and A. P. White, Metals & Control Corp.

2:00 p.m.—Land Transportation

- CP58-1207. Car Accelerator for Railroad Classification Yards. J. D. Hughson, General Railway Signal Co.
 58-1212. Freight Car Tractive Resistance Measurements by Doppler II Radar. R. D. Campbell, Westinghouse Air Brake Co.
 58-1159. A Novel Generating System for Railroad Caboose. L. B. II Haddad, R. A. Vercella and D. W. Brown, Safety Industries, Inc.

2:00 p.m.—Relays and Transmission & Distribution

- 58-1183. Improved Protection of 4 KV Feeders on the Baltimore Gas III & Electric Co. System. W. W. Ward, Jr., Baltimore Gas & Electric Co.
 58-1222. Distribution Circuit Protection American Electric Power Co. III W. H. Johnson & T. J. Meler, American Electric Power Service Corp.
 58-1229. Distribution Protection as Used on the Portland General III Electric Co. System, Portland, Oregon. M. A. Bostwick, Portland General Electric Co.
 58-1196. Distribution Circuit Protection. E. L. Guenzel and W. T. III Morris, Texas Electric Service Co.
 58-1322. High Speed Magnetic Air Breaker for Distribution Circuits. III H. P. Sleeper, Public Service Electric & Gas Co. and J. D. Findley, Westinghouse Electric Corp. (Re-presented for Discussion only.)

2:00 p.m.—Insulated Conductors

- 58-1175. Grounding and Cathodic Protection of Pipes for Pipe-Type III Feeders. F. E. Kulman Consolidated Edison Co. of N.Y., Inc.
 CP.* The St. Lawrence River High Voltage Submarine Cable Crossing Part III—Installation. D. M. Farnham, S. H. Cunha, Quebec Hydro Electric Commission, G. B. Shanklin, Schenectady, N.Y., and H. D. Short, Canada Wire and Cable Co., Ltd.
 CP.* The St. Lawrence River High Voltage Submarine Cable Crossing—Part IV—Final Tests and Field Data. D. M. Farnham, S. H. Cunha, Quebec Hydro Electric Commission, G. B. Shanklin, Schenectady, N.Y., and H. D. Short, Canada Wire and Cable Co., Ltd.

2:00 p.m.—Power System Communications

- 58-1228. Experiences with Broad-Band Carrier Coupling. H. I. Dobson, Tennessee Valley Auth.
 CP.* TVA Power System Communication Planning. L. F. Kennedy, General Electric Co.

2:00 p.m.—Electronic Circuits—II

- 58-1168. The Ferroresonant Circuit. G. E. Kelly, Prairie View Agricultural and Mechanical College.
 58-1277. Design Criteria for Low-Level Second-Harmonic Magnetic I Modulators. E. J. Kletsky, formerly with Massachusetts Institute of Technology. (Re-presented for Discussion only.)
 58-1174. Linearization of Dead-space. S. Jones, Hughes Aircraft Co. I

Thursday, October 30

9:00 a.m.—Radio Communication Systems

- 58-1236. Radio Attenuation at 11 KMC and Some Implications Affecting I Relay System Engineering. S. D. Hathaway and H. W. Evans, Bell Telephone Labs., Inc.
 58-1227. The Expansion of the Pacific Coast Microwave Network. I R. G. Kuck, Pacific Telephone and Telegraph Co.
 CP.* A UHF Exciter for AM, FM and SSB. S. Kitces, Westinghouse Electric Corp.
 58-989. Systems Engineering of Personal Radio Signaling Systems. I W. Strack, Bell Telephone Labs., Inc. (Re-presented for Discussion only)

9:00 a.m.—Rotating Machinery

- 58-1180. A General Method for Slot Constant Calculation. K. J. III Waldschmidt, A. O. Smith Corp.
 58-1158. Polyphase Induction Motors with Unbalanced Rotor Connections. B. N. Carudacher and N. L. Schmitz, Univ. of Wisconsin.

- 58-1280. Results of Motorette Evaluation of Insulation Systems. H. P. III Boettcher, A. O. Smith Corp.
 CP58-1290. Effect of Air Gap Eccentricity on Motor Sound Level. J. J. Courtin, Westinghouse Electric Corp.
 58-849. Sources of Electromagnetic Vibration in Single-Phase Induction Motors. L. W. Magyar, General Motors Corp. (Re-presented for Discussion only)

9:00 a.m.—Power System Operation—Dispatching and Personnel

- CP58-1281. Daily Dispatching and Scheduling of Kilovars. J. O. Swanson and W. R. Bosshart, Bonneville Power Adm.
 CP58-1282. New Load Dispatching Center for Philadelphia Electric Company System. W. H. Johnson, Philadelphia Electric Co.
 CP58-1283. The Selection and Training of Operating Personnel, M. J. Thrasher, Long Island Lighting Co.
 CP58-1211. Selection and Training of Operating Personnel for a Nuclear Power Station. E. J. Woolever, Duquesne Light Co.

9:00 a.m.—Industrial Control

- 58-1166. The Application of Shift Register Techniques to Materials II Handling. H. C. Diener, Jr., Westinghouse Electric Corp.
 CP58-1284. Logic Design Techniques of Static Switching Control for Transfer Machines. J. W. Stuart and R. A. Manning, Westinghouse Electric Corp.
 58-1285. Static Control in Automatic Warehousing. L. L. Bosch, A. J. II Fanthorp, Bosch & LaTour and J. W. Stuart, Westinghouse Electric Corp.
 58-1176. Elements of Reactor Controlled Reversible Induction Motor II Drives. W. Leonhard, Westinghouse Electric Corp.
 CP.* Transistorized Regulator for Battery Charging. E. E. Moyer, Acme Electric Corp.

9:00 a.m.—Substations

- CP58-1197. Design and Analysis of an Unplated High-Pressure Limited-Area Bolted Electric Joint Including a Method of Calculating the Various Components of Joint Resistance. R. K. Allen, General Electric Co.
 CP58-1286. Aluminum Angle Substation Bus Conductor. L. C. Weber, Northern States Power Co. and H. Fossum, Pioneer Service & Engineering Co.
 CP.* Cast Aluminum Alloy for Power Connectors. M. Brenner, Penn-Union Electric Corp.
 CP.* Fasteners for Electrical Connections on Aluminum Bus Conductors. D. H. Sandell and J. W. Atman, Aluminum Co. of America.
 CP58-1288. Preparation of Aluminum Conductors for Stable Electrical Connections. M. R. Monashkin, Burndy Corp.

9:00 a.m.—Nuclear Power Plants—II

- CP58-1289. Electrical Features of the Yankee Atomic Electric Plant. E. T. Witt, Stone & Webster Engr. Corp., C. F. Obermeyer, Westinghouse Electric Corp. and R. E. Minkwitz, New England Power Service Co.
 58-1194. Electrical Features of Indian Point Nuclear Electric Generating Station. T. D. Reimers, Consolidated Edison Co. of New York, Inc.
 CP58-1219. A Look at the Electrical Features—Dresden Nuclear Power Station. W. J. Shewski, Commonwealth Edison Co.
 CP.* A Single Region Slurry Homogeneous Reactor—Pennsylvania Advanced Reactor Project—Design and Maintenance. S. C. Townsend, Penna. Power & Light Co., W. E. Johnson and D. H. Fax, Westinghouse Electric Corp.

9:00 a.m.—Magnetic Amplifiers

- 58-1177. Reversible Polarity D-C Power Amplifier Using Magnetic I Amplifier Controlled Switched Transistors. N. L. Schmitz and T. Bernstein, Univ. of Wisconsin.
 58-1328. 1957 Magnetic Amplifier Bibliography. AIEE Applications I Subcommittee Report—E. J. Alexander, Chairman Working Group.
 58-1215. Behavior of the Ferroresonant Series Circuit Containing a I Square Loop Reactor. R. H. Dennard, International Business Machines Corp.
 58-1193. Volt-Second Transfer Efficiency in Fast Response Magnetic I Amplifiers—Part I—N²R and Control. T. J. Pula, Westinghouse Electric Corp. (Re-presented for Discussion only.)
 58-173. Volt-Second Transfer Efficiency in Fast Response Magnetic I Amplifiers—Part II—N²R as a Design Parameter. T. J. Pula, G. E. Lynn and J. F. Ringelman, Westinghouse Electric Corp. (Re-presented for Discussion only.)
 58-1162. A Magnetic-Amplifier Commutating and Pulse-Width Encoding I Circuit. W. H. Lucke, U. S. Naval Research Lab.
 58-1231. On Feedback in Magnetic Amplifiers—Part I—Single Feedbacks. L. A. Finzi, Carnegie Institute of Technology and J. J. Suozzi, Bell Telephone Labs., Inc.

CP58-1232. On Feedback in Magnetic Amplifiers—Part II—Combined Magnetic and Electric Feedbacks. L. A. Finzi, Carnegie Institute of Technology and J. J. Suozzi, Bell Telephone Labs., Inc.

9:00 a.m.—Computers in Control Systems

CP58-1182. Progress in Sampled-Data Systems. E. I. Jury, Univ. of California.

CP.* Survey of Sampled Data Systems Analysis. J. V. Howell, Packard Bell Computer Corp.

58-1291. A General Approach for Obtaining Transient Response by the Use of a Digital Computer. P. E. Lego, Westinghouse Electric Corp., and T. W. Sze, Univ. of Pittsburgh.

58-1198. The Operational Amplifier as a Laboratory Tool. P. E. Pfeiffer, The Rice Institute.

9:00 a.m.—Electrical Insulation

CP.* Three Decades of Progress in Electrical Insulation. L. J. Berberich, Westinghouse International Co.

58-1208. The Present Status and Anticipated Progress in the Field of Insulating Materials. T. D. Callinan, International Business Machines Corp.

CP.* Twenty Years of Progress in Silicone Insulation. J. F. Dexter, Dow Corning Corp.

CP.* Applications and Research Progress in Gaseous Dielectrics. T. W. Liao, H. G. Pfeiffer and R. E. Plump, General Electric Co.

2:00 p.m.—Radio Communication Systems

58-1292. Dial Telephone Service for Smith Island—An Isolated Community in the Chesapeake Bay. M. E. Littleton, The Chesapeake and Potomac Telephone Co. of Maryland.

CP.* ABC's of PCM. J. Cohn, Motorola, Inc.

58-1293. Public Air-Ground Telephone Service Trial. L. M. Augustus, Michigan Bell Telephone Co.

2:00 p.m.—Rotating Machinery

CP.* The Life of Class A Random Wound Motor Insulation (A Report). P. L. Alger, General Electric Co.

CP.* Insulation System Development Aided by Motorette Test. G. P. Gibson and P. G. Lucey, Westinghouse Electric Corp.

58-1279. Iron Loss Calculations on Fractional Horsepower Induction Motors. P. H. Trickey, Wright Machinery Co.

CP58-1318. Computing Iron Losses in Fractional Horsepower Induction Motor Design. C. E. Linkous, General Electric Co.

58-1221. Influence of Higher Operating Temperatures on Motor Design. R. F. Woll, Westinghouse Electric Corp.

2:00 p.m.—Power System Planning and Operating

CP58-1294. System Stability and Related Problems in the West Central United States. H. D. Hunkins, Bureau of Reclamation.

58-1295. Rural Distribution Planning. E. H. Breckenfelder and C. M. Stanley, Stanley Engineering Co.

58-1195. Forecasting Procedures Advance Effective Water Routings on the U.S. Columbia River Hydroelectric System. H. M. McIntyre and M. S. Sachs, Bonneville Power Administration.

58-1156. More Angles of Phase Shift Added to Previously Known Ice Melting Methods. I. R. Ekstrom, Commonwealth Edison Co.

58-1163. An Automatic Dispatching System. M. J. Brown, Westinghouse Electric Corp.

2:00 p.m.—Substations

CP58-1287. Evaluation of Two Basic Shapes of Conductor Grooves for Aluminum Power Connectors. W. Frank and M. Monashkin, Burndy Corp.

58-1296. Supervisory Control for Air Force Missile Test Center. C. L. Cadwell, Westinghouse Electric Corp.

CP58-1297. Application of Synchronizing Devices to Frequency Changers. R. E. Stillwagon and S. D. Silliman, Westinghouse Electric Corp.

CP58-1298. A Modern Current Regulator for D-C Machines. R. A. Geiselman, G. W. Champney and J. F. Reuther, Westinghouse Electric Corp.

2:00 p.m.—Nuclear Power Plants—III

58-531. Electrical Engineering Aspects of the Enrico Fermi Atomic Power Plant. R. H. Logue, Power Reactor Development Co. (Re-presented for Discussion only.)

CP.* Horizontal Pressure Tube Nuclear Reactor—Canadian Approach to Minimum Fuel Cost Using Natural Uranium. V. V. Mason and S. M. Jones, Canadian Westinghouse Co., Ltd.

CP58-1299. Auxiliary Power Systems for Nuclear Plants. R. E. Frick, Gilbert Associates, Inc.

CP58-1300. Training Simulator for Nuclear Power Plant Reactor Operators. N. E. Bush, Westinghouse Electric Corp.

2:00 p.m.—Feedback Control Systems—II

57-946. Differential Analyzer Aids Design of Electric Utility Automatic Dispatching System. L. K. Kirchmayer, General Electric Co. (Re-presented for Discussion only.)

58-1301. Positive Feedback Phase Space Trajectories and Application to Servo Systems. Z. H. Meiksin, Univ. of Pittsburgh.

CP58-1302. Digital Computer Study of a Third Order Non-Linear Servomechanism. Y. K. Ku and K. Fukunaga, Univ. of Pennsylvania.

58-1161. General Synthesis Procedure for Computer Control of Single and Multi-Loop Linear Systems. R. E. Kalman, International Business Machines, Inc. and J. E. Bertram, Columbia University. (Re-presented for Discussion only.)

58-1303. Closed-Loop Analysis of Sampled Data Systems with Appreciable Pulse Width. G. J. Murphy and H. B. Kennedy, Northwestern Univ.

58-1324. Analog Computer Study of Sampled-Data Systems. H. Chestnut, A. Dabul and D. W. Leiby, General Electric Co. (Re-presented for Discussion only.)

CP58-1269. Classified Bibliography on Feedback Control Systems—Part I: Sampled-Data Systems. T. J. Higgins, Univ. of Wisconsin and R. W. Greer, North American Aviation Corp.

2:00 p.m.—Automatic Programming of Digital Computers for Engineering and Data Processing

CP.* Fortran—A Close Look at an Automatic Coding System. J. T. Ahlin and W. P. Heising, International Business Machines Corp.

CP.* The Use of Automatic Programming Techniques for Solving Engineering Problems. N. Chackan, T. V. Martin and J. T. Carleton, Westinghouse Electric Corp.

CP.* Automatic Programming for Data-Processing Problems. G. M. Hopper, Sperry Rand Corp.

CP.* A Specialized Automatic Programming System for the Air Material Command. Col. E. R. Miller, Dayton Air Force Depot.

Friday, October 31

9:00 a.m.—Rotating Machinery

CP58-1305. Pioneering Insulation Evaluation. C. M. Magers and J. S. Askey, Elliott Co.

CP.* Accelerated Voltage Endurance Tests. R. H. Rhudy and H. E. Mazanek, General Electric Co.

58-1304. A Technique of Measuring the Amplitude and Harmonic Content of Surge Voltages in Machine Windings During Switching. F. A. Scheda, Westinghouse Electric Corp.

58-1320. Torque and Speed Control of Induction Motors Using Saturable Reactors. J. F. Szablya, The University of British Columbia.

9:00 a.m.—Transformers

58-1306. Temperature Rise Tests on Ventilated Dry-Type Transformers. M. F. Beavers and L. C. Whitman, General Electric Co.

58-1165. The Surge Performance of Transformers and Rotating Machines—Survey and Classification of Published Data. P. A. Abetti, General Electric Co.

58-1164. Bibliography on the Surge Performance of Transformers and Rotating Machines. P. A. Abetti, General Electric Co.

CP.* Inner-Cooled Large Power Transformers. W. D. Albright and H. R. Moore, Westinghouse Electric Corp.

9:00 a.m.—Switchgear

58-1220. A Study of the Dynamic Response of Arcs in Various Gases. K. H. Yoon and H. E. Spindle, Westinghouse Electric Corp.

58-1155. An Approach to Mathematical Analysis of A-C Arc Extinction in Circuit Breakers. T. E. Browne, Jr., Westinghouse Electric Corp.

58-943. The Effect of Linkage Flexibility of Dynamics of High Capacity Outdoor Circuit Breakers. P. Barkan and E. J. Tuohy, General Electric Co.

58-1225. Field Testing of a 69 KV Oil Circuit Breaker by the Southern California Edison Co. P. C. Edwards, Federal Pacific Electric Co. and P. Q. Nelson, Southern California Edison Co.

58-1307. An Improved Line of Frame-Mounted Outdoor Oil Circuit Breakers for Intermediate Voltages. E. E. Briggs and R. D. Hambrick, Federal Pacific Electric Co.

9:00 a.m.—Lightning Protection of Equipment

58-1226. Application of Arresters for Complete Lightning Protection of Substations. J. M. Clayton and R. W. Powell, Westinghouse Electric Corp.

58-524. Overvoltage Protection and Maintenance Testing of A-C Rotating Machines. H. R. Armstrong and J. E. Mulavey, The Detroit Edison Co.

58-1170. Lightning Protective Requirements of Generators Connected to the System through Wye-Grounded-Delta Transformers. J. K. Dillard and A. R. Hileman, Westinghouse Electric Corp.

58-1160. Surge Transfer through Three-Phase Transformers. A. R. Hileman, Westinghouse Electric Corp.

58-1203. Lightning Arrester Testing, a Proposal for a Revision in the Standards. E. Beck, Westinghouse Electric Corp.

9:00 a.m.—Training in Communications

CP58-1235. Industry Schools Its Engineers. C. E. Waldner, New York Telephone Co.

58-1152. A New Approach to Training Telephone Engineers. W. C. Burnett, Southern Bell Telephone and Telegraph Co. and L. C. Adams, Clemson College.

CP58-1323. Telephone Engineering Management Conference. P. H. Henson, Lincoln Telephone and Telegraph Co.

CP.* The Evaluation of Engineering Training in Industry. A. L. Charney, Bell Telephone Co. of Pennsylvania.

9:00 a.m.—Symposium on Conventional & Unit-Type Substations in Distribution Systems

Member of the Panel are:

C. H. McDonald, Southwestern Gas & Electric Co.

A. H. Thiermann, Virginia Electric Power Co.

J. F. Jones, Baltimore Gas & Electric Co.

H. F. Klevjer, Duquesne Light Co.

R. G. Beyer, General Electric Co.

M. S. Schneider, Cincinnati Gas & Electric Co.

H. B. Wortman, Westinghouse Electric Corp.

9:00 a.m.—Power Systems Operations—Maintenance Costs

58-1201. Time-Error Control for Interconnected Synchronous Electric Power Systems. D. Broadbent, The New South Wales University of Technology.

CP58-1308. Fundamental Concepts of Incremental Maintenance Costs as Used by Ohio Edison Co. D. B. Zelenka and R. H. Travers, Ohio Edison Co.

CP58-1309. Determination of Output Maintenance Costs on the West Penn Electric System. R. L. Ballentine, The Potomac Edison Co.; R. F. Crim, H. T. McCarthy, West Penn Power Co.; T. A. Lake and W. S. Schmidt, Monongahela Power Co.

58-1187. Application of Digital Computer Technique for Development of the Incremental Maintenance Cost. F. H. Light, Philadelphia Electric Co.

CP.* Preliminary Report on Survey of Maintenance Costs Applicable to Incremental Generation. L. T. Anstine, Baltimore Gas and Electric Co.

2:00 p.m.—Rotating Machinery

CP58-1311. A Utility's Functional Evaluation Tests for High-Voltage Stator Insulation. A. W. W. Cameron and M. Kurtz, Hydro-Electric Power Commission of Ontario.

CP58-1310. Tests and Life Expectancy of Generator Windings. V. S. McFarlin, Boston Edison Co.

CP58-1312. Experience in Analysis of D-C Insulation Test for Maintenance Programming. F. R. Schleif and L. R. Engvall, Bureau of Reclamation.

58-1151. Development of Device to Protect Turbogenerator from Damage Because of Thrust Bearing Failure. R. Bruce, C. A. Roberts and K. C. Byram, Tennessee Valley Authority.

2:00 p.m.—Transformers

58-1150. The Relationship Between Operating Voltage and the Standard Dielectric Tests for Power and Distribution Transformers. AIEE Committee Report of Dielectric Tests Subcommittee, H. H. Wagner, Chairman of Working Group.

58-1169. Are Stabilizing Windings Necessary in All Wye-Connected Transformers. B. A. Cogbill, General Electric Co.

58-1154. The Influence of Performance and Design Limits on the Design of Power Transformers by Computer. W. G. Chambers, Westinghouse Electric Corp.

CP58-1325. Computers Change Transformer Design Philosophy. H. J. Weber and G. Gallousis, Allis-Chalmers Mfg. Co.

2:00 p.m.—Switchgear

58-1173. Testing Magnetic Air Circuit Breakers for 5 Cycle Performance. J. D. Wood and W. A. Carter, I-T-E Circuit Breaker Co.

58-1313. A New Isolated Phase Bus Design. H. H. Rugg and P. H. Westermeyer, Westinghouse Electric Corp.

CP.* Inspection and Maintenance of Magnetic Air Circuit Breakers and Associated Metal Clad Switchgear. R. C. Dickinson, Westinghouse Electric Corp.

58-1202. Selecting Damping Resistors for Vacuum Switches in Bank-to-Bank Switching. J. Zaborsky, Washington Univ; J. W. Rittenhouse and E. L. Leuhring, Hi Voltage Equipment Co.

CP58-1317. Recent Developments in Metal-Clad Switchgear. J. W. McMillen, Westinghouse Electric Corp.

2:00 p.m.—Computers in Nuclear Systems

CP58-1314. Digital Calculation of Transient Performance of the Primary Coolant System in a Water Reactor. D. G. Lewis, General Electric Co.

CP58-1315. Computational and Experimental Techniques in Nuclear Reactor Design. W. F. Witzig, M. R. Stuart and L. O. Herwig, Westinghouse Electric Corp.

CP.* Present Status of Analog Representations of Nuclear Power Systems. J. M. Gallagher, Westinghouse Electric Corp.

CP58-1316. Engineering Description of a Water-Moderated Flexible Critical Facility Using Metal Fuel. E. S. Lembersky, Westinghouse Electric Corp.

CP.* Shielding Computer Program. J. T. Martin and J. P. Yalch, General Electric Co.

2:00 p.m.—Electrical Insulation

58-1205. Thermal Life of Enameled Magnet Wire. Electrical Insulation Committee Working Group Report.

58-1186. On The Behavior of Natural and Artificial Voids in Insulation Under Internal Discharge. S. I. Reynolds, General Electric Co.

58-1167. New Inorganic Insulation for 500°C Electrical Equipment. I. C. H. Vondracek and E. J. Croop, Westinghouse Electric Corp.

58-1239. Electrical Breakdown of Gases and Vapors of Chlorofluorohydrocarbons. C. N. Works and E. W. Lindsay, Westinghouse Electric Corp.

CP.* Factors Affecting the Electric Strength of Electronegative Gaseous Insulation. P. Narbut, D. Berg, C. N. Works and T. W. Dakin, Westinghouse Electric Corp.

CONTINUED FROM PAGE 1

in case you need assistance. Address your request to Mr. L. W. Mahler, Sleeping Rooms Sub-Committee, Blaw-Knox Company, 300 Sixth Avenue, Pittsburgh 22, Pennsylvania.

A hotel reservation and rate card (no postage required) accompanies this meeting notice. As indicated above, it should be sent direct to the hotel. If you mislay or lose the card, write to Office of the General Manager, Penn-Sheraton Hotel, PO Box 1978, Pittsburgh, Pa. Please indicate on your reservation card the time of your arrival and departure. If it is necessary to correspond with the hotel regarding room reservations, please mail a copy of your letter to L. W. Mahler. If you should fail to receive an acknowledgment from the hotel after a reasonable time, write to the hotel, sending a copy to L. W. Mahler.

Rates for rooms at the Penn-Sheraton are as follows:

Single Bed—bath. One person, per day.....	\$ 8.50 to \$12.50
Double Bed—bath. Two persons, per day.....	12.50 to 15.50
Twin Beds—bath. Two persons, per day.....	13.50 to 20.00
Third person in room	3.00 additional
Family Plan—Children under 14	free
Suites—Parlor and Twin Bedroom, bath	27.00, 32.00, 37.00
Suites—Parlor and Two Twin Bedrooms, bath...	50.00, 55.00

RESERVATIONS MUST BE RECEIVED by the Penn-Sheraton *not later than* October 11th. Members are urged to mail their reservations as early as possible so as to be assured of getting their desired accommodations. Every effort will be made by the local committee and the Convention Bureau to handle requests after the deadline, but this may prove difficult after the hotels have released rooms which were held for the meeting. Beneath Mellon Square Park a 800 car garage and a 600 car ramp with pickup and delivery service is located opposite the hotel entrance. There also are four open parking lots within two blocks. Airport limousines leave from the Penn-Sheraton. All airline ticket offices are in the hotel.

GOLDEN TRIANGLE FROLICS: On Wednesday evening, October 29th, the Golden Triangle Frolics will be held in the Ballroom on the 17th floor of the hotel. The evening promises to be a very enjoyable one for the members and their ladies. After dinner there will be an excellent floor show followed by dancing. Tickets will be \$11.50 each. A reservation card accompanies this meeting notice and it is recommended that it be forwarded as early as possible to avoid disappointment. Dress will be informal.

LADIES PROGRAM: The Ladies Hospitality Room will be the Presidential Suite (Room 1666) in the hotel. This room will be the headquarters for the ladies throughout the meeting. Each day, Monday through Friday, there will be a Ladies Coffee Hour from 9:00 AM to 10:30 AM. The events which have been arranged for the women attending the meeting are:

Sunday—Informal Tea in the Monongahela Room of the hotel from 4:00 PM to 6:00 PM sponsored jointly by the Ladies Committee and the Pittsburgh Section.

Monday—Afternoon Tea and Tour of the ALCOA Building—3:00 PM to 4:30 PM, courtesy of the Aluminum Company of America. This building faces Mellon Square Park, near the hotel.

Tuesday—Luncheon at Longue Vue Country Club—11:30 AM to 3:30 PM. This is through the courtesy of the Westinghouse Electric Corporation with entertainment by the Westinghouse Quartette. Free bus transportation will be furnished.

AIEE FALL GENERAL MEETING

Wednesday—Bridge-Luncheon at 12:30 PM in Utility Hall at 435 Sixth Avenue—across the street from Penn-Sheraton Hotel. This feature is through the courtesy of the Duquesne Light Company.

Thursday—Tour by free bus to University of Pittsburgh—1:00 PM to 4:30 PM. Visits to Heinz Chapel, Stephen Foster Memorial Hall and University Nationality Rooms. Tea will be served, courtesy of University of Pittsburgh.

Friday—Our program ends with morning coffee hour.

The number in attendance at the luncheons and teas will be limited. Preference will be given to the out-of-town ladies. The registration card accompanying this notice makes provision for registering your wife's intentions with regard to these features.

INSPECTION TRIPS: Pittsburgh is proud to present a series of tours that include:

The world's first full-scale nuclear electric power plant for peacetime operation.

The largest laboratory for steel research in the world.

The largest light-metals research facility in the world.

The world's largest and most modern fully-automatic freight car classification yard.

Members are urged to make advance reservations for these trips using the registration card accompanying this meeting notice. Otherwise, tickets should be purchased at the Inspection Trips desk immediately after registration in Pittsburgh. In any event, the purchase of tickets should not be delayed beyond 3:00 PM of the day preceding the trip. All tours will leave by chartered bus from the Penn-Sheraton Hotel except that to Conway Yard which will be by train from the Pennsylvania Railroad Station. The cost of each trip is \$2.00.

U.S. Steel Corp.—Irvin Works—Tuesday, October 28 (9:00 AM): This one and one-half hour tour covers the operations of the cold reduction mills, the continuous strip mill, continuous galvanizing lines, electrolytic tinning line, annealing furnaces, pickling lines and tinning stocks. Some of the latest developments in steel-making processes are to be seen here.

Westinghouse Electric Corp.—Tuesday, October 28 (1:00 PM) Tour "A"—East Pittsburgh Plant: The largest of the Divisions of the Westinghouse Electric Company, this plant manufactures the heavier apparatus lines of the electrical industry. Of particular interest are the service facilities—the world's largest network calculator and a high power laboratory "proving ground" for power apparatus of the future.

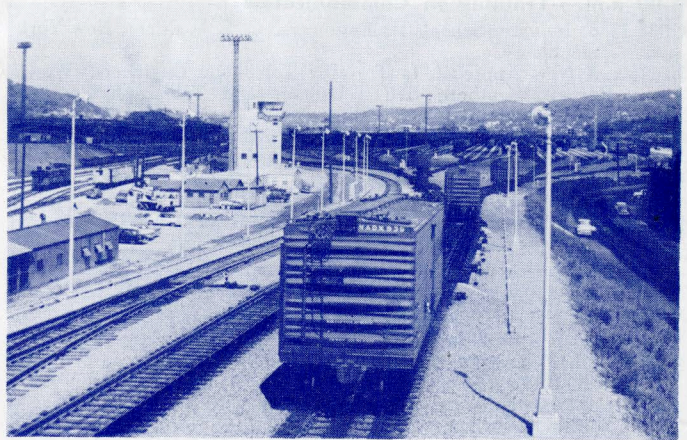
Tour "B"—Atomic Power Dept., Forest Hills and Waltz Mill: Basic engineering design for all atomic reactors is developed at Forest Hills; the experimental nuclear tests involving the designs are conducted at the criticality facility at Waltz Mill. Fuel element experiments in connection with the Yankee Atomic Electric Project are also under way at Waltz Mill. The effects of radiation on materials will be determined at the Westinghouse testing reactor, WTR, which is being constructed adjacent to the criticality facility. This visit includes the Westinghouse Reactor Evaluation Center.

Duquesne Light Co. Atomic Power Station, Shippingport—Wednesday, October 29 (1st trip at 8:30 AM followed by others in morning and afternoon as required): The world's first full-scale electric power plant devoted exclusively to peacetime needs utilizing an atomic reactor as its primary heat source. While experimental reactors of many different types have been built on a small scale, the technology of the pressurized-water reactor—the same type used on the submarine "Nautilus"—is by far the most advanced. The plant has a net output in excess of 60,000 KW at 600 pounds steam pressure. An informative trip—a first step into the world of tomorrow.

U.S. Steel Research Center, Monroeville—Thursday, October 30 (9:00 AM): The largest laboratory for steel research in the world. Nearly 1,000 technical and scientific personnel are engaged in fundamental and applied research. Subjects under investigation include such widely diversified problems as new processes for upgrading coal chemicals and the study of dislocations in the atomic structure of steel.

Aluminum Co. of America Research Laboratories, New Kensington—Thursday, October 30 (1:00 PM): The Alcoa Research Laboratories—the world's largest light-metals research facility—was established in 1918. The Research Laboratories now consists of fifteen divisions; twelve of these are located in New Kensington. The research center covers 64 acres and occupies 172,000 square feet of floor space in three buildings. The aluminum industry's major alloys—of which over 70 are now in use—were discovered by the laboratories' scientists and engineers. Constant research is going on here to uncover additional processes to widen the ever-expanding use of this versatile light metal.

Westinghouse Research Laboratory, Churchill Borough—Friday, October 31 (9:00 AM): Dedicated in 1956 these laboratories



Pennsylvania Railroad Conway Yard

employ 800 people who find the country-like atmosphere particularly conducive to the intensive pioneering research for which Westinghouse is noted. "Blue Sky," Research-of-the-Future, occupies thirty per cent of the total man hours expended. Fifty per cent of the time is spent in basic research. Government oriented research associated with Reactor Development, Communications, and Detecting Devices are examples of other work carried on at the Laboratories. Here are to be found the latest developments in laboratory equipment and laboratory planning.

Pennsylvania Railroad, Conway Yard—Friday, October 31 (1:00 PM): The world's largest and most modern fully-automatic freight car classification yard. Through Conway passes most of the enormous east-west traffic between the Eastern Seaboard, Great Lakes, and Middle West. The efficiency of automation is apparent here where 9,000 cars per day are sorted and classified according to their destination. The system uses electronic analog computers, radar, automatic switching, inductive trainphone, cab signals, electronic scales, punched-card accounting machines, micro-talkie radios, intercom and paging systems, automatic floodlights, pneumatic tubes, teletypes, and tape recorders. A special train will leave from the Pennsylvania Railroad Station to take visitors direct to the center of Conway Yard.

Alcoa Exhibit: During the five days of the Fall Meeting, the entire entrance and main lobbies of the ALCOA Building will be turned into a live encyclopedia of aluminum electrical and electronic equipment for the utility and industrial fields. From "A" for Armatures to "W" for Windings, this display will show representative products of all the major equipment manufacturers and will be perhaps the most complete grouping of such equipment ever collected. Among the features will be a scale model of Alcoa's steam generating station at Warrick, Indiana, now under construction. The model shows the aluminum features of a plant that is estimated to represent the greatest per-kw use of aluminum in the history of power generation.

REGISTRATION: Advance registration to the Fall General Meeting is not required. Registration fees are \$5.00 for members and \$8.00 for non-members. Families and student members will not be charged a registration fee. The registration desk will be located in the Sky Room on the 17th Floor. Information and ticket sales will be established in the corridor just outside the Sky Room.

A reservation card is enclosed with this meeting notice which should be used to indicate your intentions regarding the Golden Triangle Frolics (\$11.50), Tuesday and Thursday Luncheons (\$3.75 each), Inspection Trips (\$2.00 each) and Ladies Events (free). This card should be mailed to Mr. M. P. Getting, Chairman, Registration; 1958 Fall General Meeting; Allis-Chalmers Manufacturing Company; Columbia & Preble Aves.; Pittsburgh 33, Pennsylvania. Make checks payable to "1958 Fall General Meeting."

COMMITTEES: The members of the Fall General Meeting Committee are: A. A. Johnson, Chairman; Dixon Lewis, Vice Chairman; W. H. Osterle, Secretary; A. P. Hayward, Treasurer; Pascal Beckjord, Hospitality; C. N. Clark, Hotels, Meeting Rooms and Facilities; Mrs. Tomlinson Fort, Ladies Activities; M. P. Getting, Registration; E. L. Harder, Program; W. R. Harris, Chairman Pittsburgh Section; E. M. Hays, Inspection Trips and Transportation; R. E. Larson, Papers, Printing and Tickets; E. S. Reeser, Entertainment; F. H. Schlough, Publicity; B. R. Teare, Jr., V.P.—Dist. #2; E. M. Williams, Student Activities.

Issued by
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
33 West 39th Street, New York 18, N. Y.

PRINTED IN U.S.A.